

## **CLAIMS**

### **We claim:**

1. A method for connecting a plurality of streaming nodes in a streaming graph in a network environment comprising the steps of:

determining a set of connection constraints for a connection between streaming nodes;

selecting at least one performance parameter to optimize for the streaming graph;

connecting the streaming nodes if the set of connection constraints is satisfied;

and

optimizing the at least one performance parameter.

2. The method of claim 1 further comprising the steps of:

determining if each streaming node resides on a first bus;

for each streaming node that resides on a second bus:

determining if at least one first gateway exists to connect the first bus to the second bus; and

if at least one first gateway exists:

connecting the first bus and the second bus to the first gateway if the set of connection constraints is satisfied.

3. The method of claim 2 further comprising the steps of:

if there is no first gateway:

determining if there is a second gateway to connect the first bus to a common bus;

determining if there is a third gateway to connect the second bus to the common bus; and

if at least one common bus exists:

connecting the second gateway to the first bus and the common bus  
and connecting the third gateway to the second bus and the common bus if the set of connection constraints is satisfied.

4. The method of claim 3 wherein at least one of the streaming nodes has a plurality of bus types, the method further comprising the step of:

if one of the bus types and common bus is an IP bus:

using the IP bus if the set of connection constraints is satisfied.

5. The method of claim 4 wherein the step of connecting the second gateway to the first bus and the common bus and connecting the third gateway to the second bus and the common bus if the set of connection constraints is satisfied further comprises the step of selecting the common bus corresponding to a latency that is closest to a target latency.

6. The method of claim 1 wherein the streaming nodes and connections between streaming nodes form a topology and wherein a record is kept of a change to the topology when a connection is made and when a connection is broken such that if the set of connection constraints is not satisfied, the topology prior to the change is recovered.